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A DIFFERENTIATED APPROACH IN PRIMARY EDUCATION: WORKING WITH PUPILS OF DIFFERENT ATTAINMENT LEVELS

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Abstract: The article analyses the theoretical foundations and practical methodology of the differentiated approach in primary education. The problem lies in the fact that the attainment levels of same-age pupils in a single class differ markedly, while the traditional frontal lesson is geared towards the “average pupil”. The aim of the study is to develop a practical methodological model for working with pupils of different levels and to test it in a pedagogical experiment. The methods applied were theoretical analysis, comparison and a three-stage pedagogical experiment (ascertaining, formative and control); the principal techniques were multi-level tasks, differentiated cards, flexible grouping and the gradual reduction of support. The illustrative results show a decrease in the share of low attainment and an increase in high attainment in the experimental group. Conclusion: differentiation provides greater scope for the development of every pupil than frontal teaching, yet it requires accurate diagnostics on the part of the teacher and pre-prepared multi-level materials.

Keywords: differentiated approach, primary education, attainment level, individualization, differentiated tasks, multi-level cards, pedagogical experiment, zone of proximal development.

Аннотация. В статье анализируются теоретические основы и практическая методика дифференцированного подхода в начальном образовании. Проблема состоит в том, что уровень усвоения у сверстников в одном классе заметно различается, а традиционный фронтальный урок ориентирован на “среднего ученика”. Цель исследования — разработать практическую методическую модель работы с учащимися разного уровня и проверить её в педагогическом эксперименте. Использованы теоретический анализ, сравнение и трёхэтапный эксперимент. Иллюстративные результаты показывают снижение доли низкого уровня и рост высокого в экспериментальной группе. Вывод: дифференциация даёт больше возможностей для развития каждого ученика, но требует точной диагностики и заранее подготовленных разноуровневых материалов.

Ключевые слова: дифференцированный подход, начальное образование, уровень усвоения, индивидуализация, дифференцированные задания, разноуровневые карточки, педагогический эксперимент, зона ближайшего развития.

Annotatsiya. Maqolada boshlang‘ich ta’limda differensial (tabaqalashtirilgan) yondashuvning nazariy asoslari va amaliy metodikasi tahlil qilinadi. Muammo bir sinfdagi tengdosh o‘quvchilarning o‘zlashtirish darajasi sezilarli farq qilishida hamda an’anaviy frontal darsning “o‘rtacha o‘quvchi”ga mo‘ljallanganida ko‘rinadi. Tadqiqotning maqsadi turli darajadagi o‘quvchilar bilan ishlashning amaliy metodik modelini ishlab chiqish va uni pedagogik tajribada sinab ko‘rishdan iborat. Illyustrativ natijalar tajriba guruhida past o‘zlashtirish ulushining kamayishi va yuqori darajaning ortishini ko‘rsatadi. Xulosa: differensiatsiya frontal ta’limga nisbatan har bir o‘quvchining rivojlanishiga ko‘proq imkon beradi, biroq u o‘qituvchidan aniq diagnostika va oldindan tayyorlangan ko‘p darajali materialni talab qiladi.

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Kalit so‘zlar: differensial yondashuv, boshlang‘ich ta’lim, o‘zlashtirish darajasi, individuallashtirish, tabaqalashtirilgan topshiriqlar, ko‘p darajali kartochkalar, pedagogik tajriba, yaqin rivojlanish zonasi.

Relevance of the problem

Although children of the same age sit in a single classroom, they are never identical in knowledge and skills. Pre-school preparation, the family environment, reading pace, stability of attention and range of interests all create considerable differences between children. The traditional frontal lesson, however, is most often geared towards a notional “average pupil”. As a result, children at both poles suffer: the strong pupil grows bored with tasks that are easy for them and ceases to develop, while the weak pupil cannot keep up with the pace and falls behind.

This can be seen in a simple situation. The teacher explains a new topic, works one model exercise on the board and gives the whole class the same task. The strong pupil finishes it within a minute and then sits idle or distracts classmates. The average pupil performs the operations but only partly understands why they are being carried out. The weak pupil does not even manage to grasp the conditions of the task and, out of embarrassment, stays silent without asking a question. One and the same task produces three different outcomes, and none of these outcomes fully corresponds to the aim the teacher had in mind.

The specific character of the primary stage sharpens the problem still further. It is precisely in these years that the basic skills of reading, writing and calculation are formed; a small gap in these skills accumulates in the later grades and turns into a much greater lag. If a child has not mastered the multiplication table properly in the second grade, word problems in the third grade will confuse them completely. Differentiation, therefore, is not a luxury but a means of breaking the chain of gaps in good time.

The theoretical core of this approach is Vygotsky’s idea of the zone of proximal development [3]. The distance between what a child can do independently and what they can do with adult assistance — their zone of development — differs from child to child. Support that is sufficient for one child may be insufficient for another or, conversely, excessive. For this reason, giving every pupil support of the same measure is pedagogically unfounded; instruction must be adapted to the zone of each individual child.

In practice, almost every teacher acknowledges the necessity of differentiation, yet its actual implementation remains weak. The reasons are clear: class sizes, the teacher’s workload and, most importantly, the shortage of ready-made multi-level material. The aim of the present study is to develop a practical methodological model for working with pupils of different attainment levels that can be applied in the classroom, and to test its effectiveness in a pedagogical experiment. Accordingly, the following objectives were set: to carry out a comparative analysis of the theoretical models of differentiation; to develop criteria for determining attainment levels; to design a system of multi-level tasks and test it experimentally; and, on the basis of the results obtained, to offer practical recommendations for teachers.

Literature review

The problem of differentiation has been studied along various lines in both Western and post-Soviet pedagogy. In the Western tradition the most influential approach belongs to Tomlinson, who proposes adapting the content, process and product of instruction to the pupil’s readiness, interests and

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learning profile [1; 2]. Bloom's theory of mastery learning provides the basis for differentiation by pace: pupils are given the opportunity to reach the same result in different amounts of time [5]. Gardner's theory of multiple intelligences [4] is popular among advocates of differentiation, yet I consider it a mistake to treat it as absolute — serious objections have been raised against its empirical basis, and it is therefore appropriate to regard it not as a practical criterion but as an idea to be approached with caution.

Post-Soviet didactics has elaborated the problem more precisely in conceptual terms. Unt distinguishes individualization from differentiation: individualization means taking account of the characteristics of each pupil, whereas differentiation means dividing pupils into groups for that purpose [6]. Rabunsky grounds the individual approach in the analysis of the pupil's independent work [7]. Monakhov, Orlov and Firsov distinguish differentiation by level from differentiation by profile and show that it is precisely the level-based approach that is appropriate for the primary stage [8]. Yakimanskaya, within the framework of personality-oriented education, places the pupil's subjective experience at the centre [9].

Generalising these sources, three practical models of differentiation can be distinguished. The level-based model varies the complexity of the task; it is easy to manage, but carries the risk of fixing groups rigidly. The pace-based model adapts time and speed; it benefits the weaker pupil, but makes it harder to maintain the rhythm of the class. The task-type model delivers the same content through different activities; it increases interest, but demands a great deal of preparation from the teacher. In my view, the most effective course in the primary classroom is to apply all three models in combination within a single lesson, without separating them rigidly.

Differentiation is not free of criticism. International research emphasises that dividing pupils into permanent ability groups may lower the expectations held of children in the lower group and restrict their development. In other words, if differentiation is applied incorrectly it turns into labelling rather than support. For this reason I consider it justified to rely not on rigid, fixed groups but on flexible and temporary grouping: a child who is at a low level in one topic today may move to the medium or high level in another topic. This is precisely where the ethical limit of differentiation lies — it must remain support rather than stratification.

The theoretical basis in the existing literature is rich, yet one important gap remains: few methodological models have been developed for the primary grades of Uzbekistan that are precise, measurable and applicable by the teacher without excessive additional burden. Most sources describe differentiation as a general principle but leave open the question of how to implement it in the lesson and how to measure its results. The present study is aimed precisely at filling this gap — at presenting a practical model that has been tested and evaluated by means of numerical indicators.

Methods and description of the experiment

The purpose of the experiment was to test the effectiveness of a methodological model based on the differentiated approach, using mathematics as the example subject. Two parallel third-grade classes of a single secondary school were taken as the experimental base (illustrative data): the experimental group (EG) — 25 pupils, and the control group (CG) — 26 pupils. The two groups were selected so as to be close to one another in initial preparation, which was a necessary condition for comparing the results.

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The experiment was conducted in three stages. At the ascertaining stage, the initial attainment level of each pupil was determined by means of a diagnostic assignment. At the formative stage, differentiated techniques were applied systematically in the experimental group, while conventional frontal teaching continued in the control group. At the control stage, a final assignment of the same level of complexity was administered in both groups and the dynamics were measured. As an assessment criterion, attainment was divided into three categories: high (86–100 per cent), medium (66–85 per cent) and low (50–65 per cent).

Both the diagnostic assignment and the final test were designed with the same structure — comprising tasks that check knowledge, application and independent thinking — so that the comparison of dynamics would be reliable. The percentage a pupil scored determined their level, yet the level was regarded not as a label but as the starting point of the work. This distinction matters at the level of principle: the aim is not to classify a child as low or high, but to find the load that suits them at this particular moment.

The core of the model is a system of multi-level tasks. For every topic, cards of three levels were prepared. The level “A” card is intended for the lower group: in it the problem is broken down into stages, and a model and step-by-step guidance are provided; a word problem, for instance, is guided piece by piece from the conditions through to the question. The level “B” card is the standard one: the problem is given in full, but without additional support. The level “C” card is intended for the strong group and envisages an extended or creative task — for example, the pupil composes a problem of the same type themselves or finds several ways of solving it. In this way one and the same topic is mastered at three different depths.

Let us take, as an example, the third-grade topic of two-step word problems. On card “A” the problem is given in parts: “Forty kilograms of flour were delivered to the shop. On the first day 12 kg were sold, on the second day 15 kg. 1) How much flour was sold over the two days? 2) How much flour was left?” — the questions guide the pupil in sequence. On card “B” the same problem is given with a single question: “How much flour was left?” — the pupil plans the operations independently. On card “C” the pupil is shown a ready answer (13 kg, for example) and asked to compose the text of a problem that leads to that answer. One topic — three levels of thinking.

Grouping was organised flexibly. In some exercises homogeneous groups were used (pupils of the same level working together) — this allowed the teacher to direct support precisely. In other tasks heterogeneous (mixed) groups were formed, in which a strong pupil explained the material to a weaker one and peer teaching emerged. The composition of the groups was not fixed but was changed according to the topic and the results; this prevents the label of the “lower group” from becoming entrenched in the child’s mind.

Adaptation by pace was also applied: pupils who finished a task early were given an enriching supplementary assignment, while those working more slowly were given additional time and guiding questions. In reading lessons the complexity of the text was adapted — a simplified and an extended version of the same text were prepared, together with questions of varying depth. Throughout the process the principle of the zone of proximal development was observed: support was given in full at the outset and then reduced step by step as the pupil became more independent.

In the reading lesson differentiation takes a different form. One and the same story was worked through at three levels: the lower group was given an abridged version of the text with simple sentences and questions checking the main content (“Who? Where? What did they do?”). The medium

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group read the full text and answered cause-and-effect questions ("Why did it happen that way?"). The strong group received the task of evaluating the text and continuing it creatively ("What would you have done in the hero's place?"). This approach corresponds to the levels of thinking in Bloom's taxonomy — from knowledge through to analysis and evaluation [5].

Results

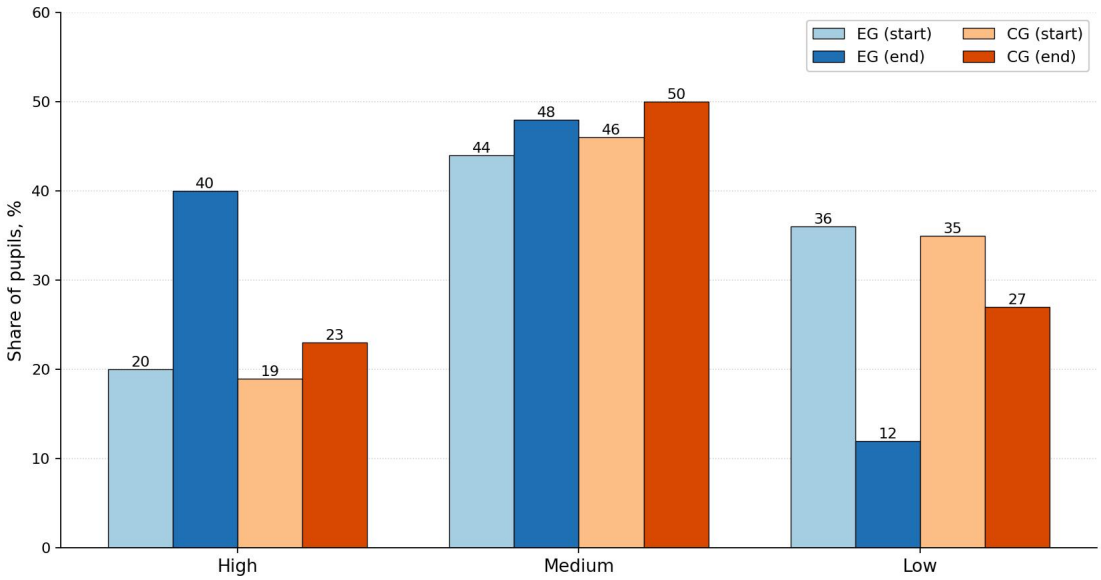
At the ascertaining stage the experimental and control groups were in an almost equal position in terms of attainment. The control measurement carried out after the formative work had been completed revealed a considerable difference between the two groups. The table below presents the attainment levels (as percentages) at the beginning and at the end of the experiment.

Table 1. Dynamics of attainment levels in the experimental and control groups (%)

Attainment level	EG at start	EG at end	CG at start	CG at end
High (86–100%)	20	40	19	23
Medium (66–85%)	44	48	46	50
Low (50–65%)	36	12	35	27

In order to present the data of the table visually, the diagram below compares the dynamics of the levels in the two groups.

Figure 1. Dynamics of attainment levels in the experimental (EG) and control (CG) groups



Note: the diagram has been compiled on the basis of illustrative data; [to be completed with the author's actual data].

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The trend in the figures is clear enough. In the experimental group the share of pupils at the low attainment level fell from 36 to 12 per cent, while the high level rose from 20 to 40 per cent. A slight positive change was also observed in the control group, but it was considerably smaller: the low level moved from 35 to 27 per cent and the high level from 19 to 23 per cent. In other words, there is a shift in both groups, but the shift in the experimental group is several times greater.

One aspect deserves particular attention — the behaviour of the medium level. This category remained relatively stable in both groups, because it performs the function of a transitional zone of sorts: those who rise from the low level join it, while those who move above it leave. It would therefore be a mistake to draw conclusions from the percentage of the medium category alone; the real change is visible in the dynamics of the two outer categories — the low and the high. It is from precisely this standpoint that the results should be read.

This dynamic can be explained from a methodological standpoint. The transition from the low level to the medium one occurred largely thanks to the level "A" cards and the step-by-step reduction of support: the staged guidance helped the child to understand the problem, after which they began to work independently. The growth of the high level, in turn, is connected with the enriching level "C" tasks — strong pupils stopped being bored and worked on more complex problems. It should be emphasised separately that the figures cited are illustrative in character; the trend observed, however, fully corresponds to the theoretical expectation of differentiation, namely that overall attainment rises when each level is given a load appropriate to it.

The reliability of the experimental results depends on several conditions. Above all, the initial equivalence of the two groups must be ensured, otherwise the difference may be attributed not to differentiation but to the initial disparity. In addition, since the sample is limited to one or two classes, caution is required in transferring the conclusions to the system as a whole. Openly acknowledging these limitations does not diminish the value of the study; on the contrary, it helps its results to be assessed objectively.

Conclusions and methodological recommendations

The analysis and experiment carried out lead to a number of well-founded conclusions. Differences in the attainment levels of pupils in the primary classroom are a natural state of affairs that should not be denied but taken into account. Compared with frontal teaching, the differentiated approach enables every child to work within their own zone and, as the illustrative results show, serves to reduce the share of pupils at the low level and to increase the high level. At the same time, differentiation is no magic wand: it demands of the teacher accurate diagnostics, pre-prepared multi-level material and flexible organisation.

The practical recommendations for teachers are as follows. The work must begin not with labelling but with diagnostics: without knowing the actual level of each pupil, differentiation becomes a matter of chance. Preparing a set of three-level tasks for every topic in advance shifts the teacher's burden from the lesson itself to the preparation stage. Grouping should not be rigid but variable according to the task, and the child must be protected from the label of the "lower group". Support should be given not permanently but on a gradually diminishing basis, otherwise the child becomes accustomed to assistance. Finally, although assessment is adapted to the level, it is important that the final requirement remains the same for all — the aim of differentiation is not to lower the requirement but to lead every pupil towards the common goal by their own route.

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A realistic way of easing the practical burden is the collective creation of a bank of multi-level cards. If the teachers of a single school or methodological association jointly prepare three-level tasks by topic and pool them in a shared fund, every teacher is spared having to create the material from scratch. Such a fund is replenished over time and turns differentiation from an individual feat into a natural part of everyday practice.

The theoretical significance of the study lies in its offering a practical solution that combines the three models of differentiation within the framework of the primary school lesson; its practical significance lies in bringing that solution into a measurable form that the teacher can apply directly. In future research it would be advisable to extend the model to other subjects and grades and to study its long-term effect.

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